

Application No.: 10/601,597Docket No.: 2336-181REMARKS

Applicants appreciate the Examiner's thorough review of the present application, and respectfully request reconsideration in light of the preceding amendments and the following remarks.

Claims 5 and 18-23 are pending in the application. Claims 1-4 and 6-17 have been cancelled without prejudice or disclaimer. Claim 5 has been rewritten in independent form including all limitations of base claim 1, without otherwise touching the merits. New claims 18-23 have been added to provide Applicants with the scope of protection to which they are believed entitled. No new matter has been introduced through the foregoing amendments.

The 35 U.S.C. 103(a) rejections of claims 1-4 and 6 are moot as the rejected claims have been cancelled.

The 35 U.S.C. 103(a) rejection of claim 5 as being obvious over *Miura* (U.S. Patent No. 5,665,986) in view of *Keizo* (JP 2001-339100) and *Ishida* (U.S. Patent Application Publication No. 20040209542) is traversed because *Ishida* is non-analogous art that cannot be applied against the claims of the instant application.

"In order to rely on a reference as a basis for rejection of an applicant's invention [under 35 U.S.C. 103(a)], the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992) ("A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem."); and *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed.

BEST AVAILABLE COPY

Application No.: 10/601,597Docket No.: 2336-181

Cir. 1993). See *MPEP*, section 2141.01(a).

At the end of paragraph 5 of the Office Action, the Examiner alleged that *Ishida* is from the same field of Applicants' endeavor. Applicants respectfully disagree. The present invention relates to vertical GaN (i.e., inorganic) light emitting diodes, whereas *Ishida* relates to the field of organic light emitting diode (OLED) displays. *See* page 1, lines 5-10 of the specification and paragraph [0002] of *Ishida*. A person of ordinary skill in the art would at once recognize that the two technologies are completely different, and cannot be regarded as belonging to the same field of endeavor. This is also evident from the absolutely unrelated classifications of the present invention (257/13, *see* the Examiner's Restriction Requirement dated September 2, 2004) and *Ishida* (445/24, *see* the front page of *Ishida*, item (52)). Therefore, it cannot be said that *Ishida* is from the field of Applicants' endeavor.

Applicants further submit that *Ishida* is not reasonably pertinent to the particular problem with which the inventor was concerned. The particular problems with which the Applicants were concerned have been specified in the specification, pages 4-5, i.e., the low current efficiency, weak electrostatic discharge effect, insufficient heat dissipating capacity, and unsatisfactory luminance of conventional GaN light emitting diodes. *Ishida* deals with a method and Applicants for warpage compensation of a display panel substrate assembly using OLED in which the assembly has a substrate having a substrate warpage level exceeding a tolerance level. *See* paragraphs [0002] and [0020] of *Ishida*. A person of ordinary skill in the art would at once recognize that the matter with which *Ishida* deals (i.e., warpage compensation), logically would not have commended itself to the Applicants' attention in considering the completely different problems of the conventional GaN diodes (i.e., low current efficiency, weak electrostatic discharge effect, insufficient heat dissipating capacity, and unsatisfactory luminance). Therefore, it cannot be said that *Ishida* is reasonably pertinent to the present invention.

For the reasons advanced above, *Ishida* is clearly non-analogous art that cannot be applied

Application No.: 10/601,597Docket No.: 2336-181

against the claims of the instant application. The 35 U.S.C. 103(a) rejection of claim 5 is therefore erroneous and should be withdrawn.

Claim 5 is not obvious over the applied references (*Miura, Keizo* and *Ishida*) further for the following reason. On the one hand, the claimed invention is directed to a GaN light emitting diode having improved luminance, wherein a conductive adhesive layer made of Au-Sn, Sn, In, Au-Ag or Pb-Sn is used to attach a conductive substrate to a second conductive GaN clad layer or a reflective layer. Advantageously, the conductive adhesive layer improves the luminance of the GaN light emitting diode due to its reflectivity. See page 10, lines 8-13 of the instant application. On the other hand, *Ishida* discloses a method and apparatus for warpage compensation of an OLED display panel substrate assembly. A conductive adhesive layer 460 of *Ishida* is used to attach an electrode 240 of an OLED structure 200 to an electrode pad 450. See FIG. 5 of *Ishida*. Apparently, the conductive adhesive layer 460 of *Ishida* performs a function different from that of the conductive adhesive layer of claim 5. Particularly, since the Pb-Sn adhesive layer 460 is interposed between the electrode 240 and the electrode pad 450 of *Ishida*, it is impossible to improve luminance in *Ishida*'s OLED panel by the reflectivity of the conductive adhesive layer 460. As a result, although the conductive adhesive layer 460 of *Ishida* can be made of Pb-Sn, the prior art reference fails to provide any suggestion or motivation to combine the semiconductor of *Miura/ Keizo* and the conductive adhesive layer of *Ishida* to arrive at the invention of claim 5.

Accordingly, Applicants respectfully submit that claim 5 is patentable over the applied references. Claims 18-23 depend from claim 5, and are considered patentable at least for the reasons advanced with respect to claim 5.

Each of the Examiner's rejections has been traversed. Accordingly, Applicants respectfully submit that all claims are now in condition for allowance. Early and favorable indication of allowance is courteously solicited.

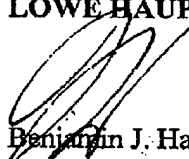
Application No.: 10/601,597Docket No.: 2336-181

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

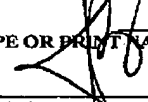
Respectfully submitted,

LOWE HAUPTMAN & BERNER, LLP


Benjamin J. Hauptman
Registration No. 29,310

USPTO Customer No. 22429
1700 Diagonal Road, Suite 310
Alexandria, VA 22314
(703) 684-1111 BJH/KL/klb
(703) 518-5499 Facsimile
Date: March 7, 2005

CERTIFICATION OF FACSIMILE TRANSMISSION
I HEREBY CERTIFY THAT THIS PAPER IS BEING FACSIMILE TRANSMITTED
TO THE PATENT AND TRADEMARK OFFICE ON THE DATE SHOWN BELOW


TYPE OR PRINT NAME OF PERSON SIGNING CERTIFICATION

SIGNATURE

DATE
March 7, 2005

703-872-9306
FACSIMILE NUMBER

BEST AVAILABLE COPY